

WORKSHEET
Inequalities --- Sign Graphs
Section 2.6

NAME: Key
PERIOD: _____
DATE: _____

Use a sign graph to solve each of the following.
Determine and label the critical values of the inequality.
Indicate the signs of each factor of the inequality below the line.
Indicate the sign for the inequality above the line.
Write your answer to the inequality in interval notation.

1. $(x+5)(2x-5)(9x+3) < 0$ $(-\infty, -5) \cup (-\frac{1}{3}, \frac{5}{2})$
 $x = -5 \quad x = \frac{5}{2} \quad x = -\frac{1}{3}$

$(x+5)$
 $(2x-5)$
 $(9x+3)$

2. $(x+5)(7-2x)(3x-1)(x+4) \geq 0$ $[-5, -4] \cup [\frac{1}{3}, \frac{7}{2}]$
 $x = -5 \quad x = \frac{7}{2} \quad x = \frac{1}{3} \quad x = -4$

$(x+5)$
 $(7-2x)$
 $(3x-1)$
 $(x+4)$

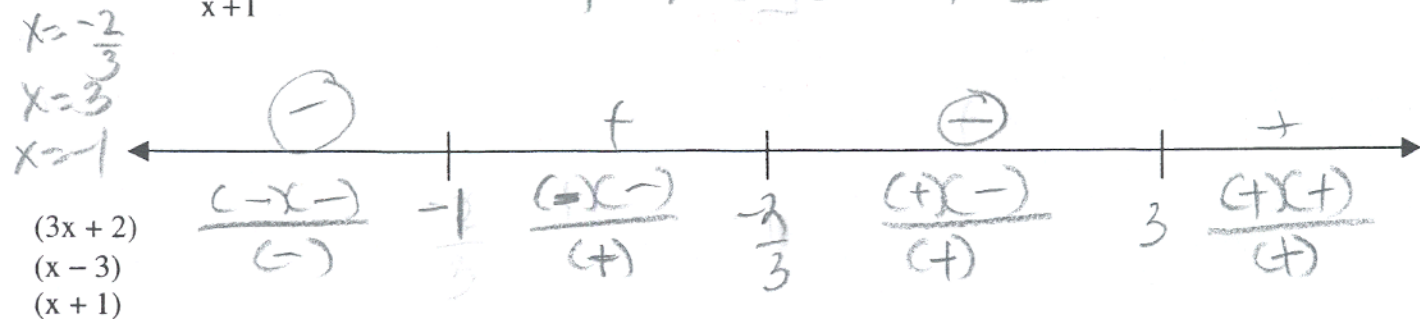
3. $x(1+x)(x-2)(6x-5) > 0$ $(-\infty, -1) \cup (0, \frac{5}{6}) \cup (2, \infty)$
 $x = 0 \quad x = -1 \quad x = 2 \quad x = \frac{5}{6}$

x
 $(1+x)$
 $(x-2)$
 $(6x-5)$

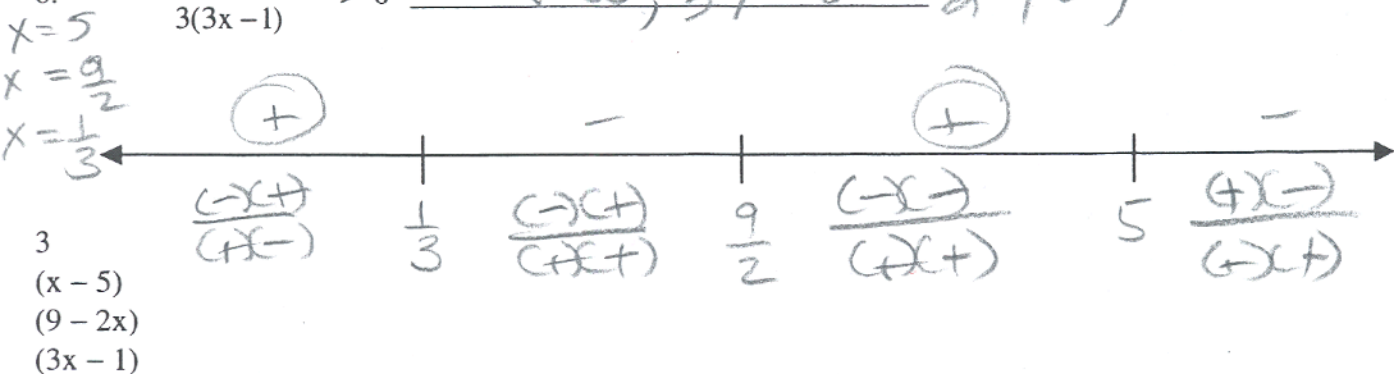
4. $-6(1-3x)(3x-2)^2(x-8)^3 < 0$ $(\frac{1}{3}, \frac{2}{3}) \cup (\frac{2}{3}, 8)$
 $x = \frac{1}{3} \quad x = \frac{2}{3} \quad x = 8$

$(1-3x)$
 $(3x-2)^2$
 $(x-8)^3$

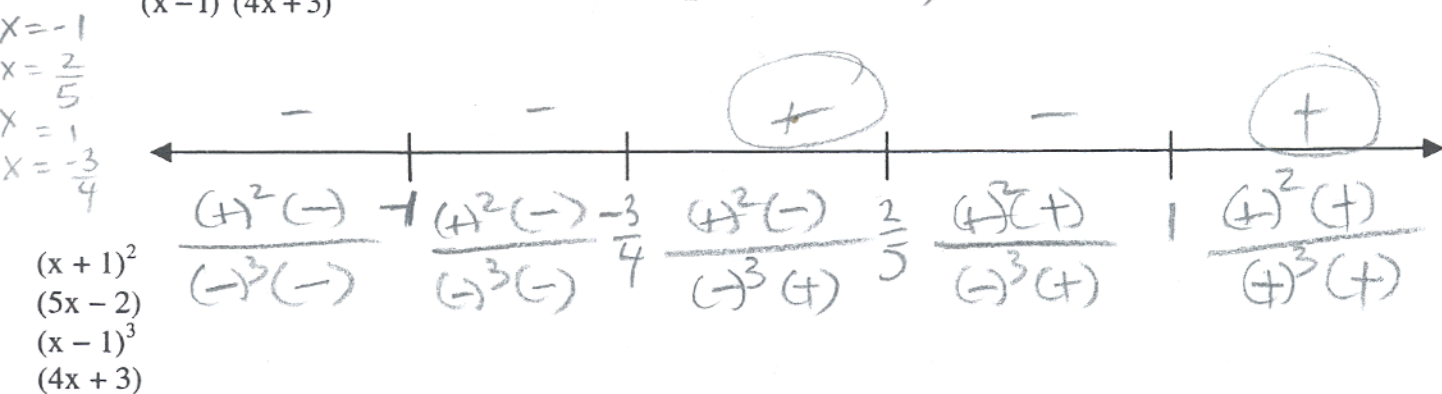
5. $\frac{(3x+2)(x-3)}{x+1} \leq 0$ $(-\infty, -1) \cup [-\frac{2}{3}, 3]$



6. $\frac{(x-5)(9-2x)}{3(3x-1)} > 0$ $(-\infty, \frac{1}{3}) \cup (\frac{9}{2}, 5)$



7. $\frac{(x+1)^2(5x-2)}{(x-1)^3(4x+3)} \geq 0$ $\{1\} \cup (-\frac{3}{4}, \frac{2}{5}] \cup (1, \infty)$



8. $\frac{(x+4)(2-x)}{-3} < 0$ $(-4, 2)$

